IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

SMART RF INC., Plaintiff, vs. AT&T MOBILITY LLC, Defendant.	§ § § § § § § § §	Case No. 2:24-cv-00195-JRG (Lead Case) **JURY TRIAL DEMANDED**
SMART RF INC., Plaintiff, vs. CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, Defendant.	§ § § § § § § § §	Case No. 2:24-cv-00196-JRG (Member Case) **JURY TRIAL DEMANDED**
SMART RF INC., Plaintiff, vs. T-MOBILE US, INC., T-MOBILE USA, INC., SPRINT LLC, SPRINT SOLUTIONS LLC, AND SPRINT SPECTRUM LLC, Defendants.	§ § § § § § § § § § §	Case No. 2:24-cv-00197-JRG (Member Case) **JURY TRIAL DEMANDED**

DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY REGARDING U.S. PATENT NOS. 9,641,204

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I. INTRODUCTION

Defendants (AT&T, Verizon, and T-Mobile) move for summary judgment of invalidity of U.S. Patent No. 9,641,204 (the "'204 Patent"). First, the '204 Patent is invalid under 35 U.S.C. § 101. Dr. Bassam admitted that his patent is merely directed to ***ideas***, whereas his related IEEE paper discloses the actual implementation of his ideas. Plaintiff's expert, Dr. Madisetti, similarly acknowledges the deficiencies in the '204 Patent by having to rely on Dr. Bassam's IEEE paper to argue that the Asserted Claims are enabled. But it is foundational patent law that an idea itself is not patentable. Nor is there any inventive concept to save the Asserted Claims as they only require admittedly well-known, conventional components.

Second, the '204 Patent Asserted Claims are invalid in view of another Smart RF patent: U.S. Patent No. 8,767,857. In fact, the '204 Patent's lead inventor—Dr. Aidin Bassam—admitted that both the individual components and the arrangement of the '204 Patent Asserted Claims were known before Smart RF filed its patent applications. There is no genuine dispute of material fact that the claims are invalid, and summary judgment is warranted.

II. TECHNICAL BACKGROUND

Telecommunications radios produce a modulated radio frequency signal that a power amplifier (PA) amplifies to a higher power level. PAs may introduce "distortions" during this process, and "digital predistortion" ("DPD") is used to counteract the PA's distortions.

Analog to digital conversion is the process of sampling an analog waveform and then transforming the analog waveform into a digital representation. Ex. D (Proctor Inv. Report), ¶733. To represent an analog signal digitally, this process is repeated at a "sampling rate." *Id.*, ¶734. Generally, sampling can be done at or higher than twice the highest signal frequency (referred to as the Nyquist rate). *Id.,* ¶735. Sampling at this rate guarantees no overlaps in the sampled spectrum. *Id.* Sampling below the Nyquist rate is known as "subsampling." *Id.* Subsampling, however, was

known to create mirror replicas (aliases) of the signal (*id.*, ¶736) and proper selection of the sample frequency is important if subsampling is used. *Id.* The widely known equations (*id.*, ¶737) to determine an acceptable alias-free sample rate are depicted here. These well-known concepts are the subject of the '204 Patent claims.

$$\frac{2f_H}{n} \leq f_s \leq \frac{2f_L}{n-1}$$

$$n_{max} = \left\lfloor \frac{f_H}{f_H - f_L} \right\rfloor$$

III. STATEMENT OF THE ISSUES TO BE DECIDED BY THE COURT

Whether the '204 Patent's Asserted Claims are invalid under 35 U.S.C. §§ 101 and 103.

IV. STATEMENT OF UNDISPUTED MATERIAL FACTS

1. The '204 Patent is titled "Digital Multi-band Predistortion Linearized with Nonlinear Subsampling Algorithm in the Feedback Loop," Ex. A ('204 Patent) at 1 (Cover Page), and the Asserted Claims are 1, 12 and 14 (dependent claim). Ex. B (Madisetti Infr. Report), p. 129.

2. The '204 Patent issued on May 2, 2017, and claims priority to an application filed on October 14, 2011. Ex. A at 1 (Cover Page); Ex. B, p. 123.

3. The '204 Patent identifies four inventors: Fadhel M. Ghannouchi, Seyed Aiden Bassam, Mohamed Helaoui, and Andrew Kwan. Ex. A at 1 (Cover Page).

4. U.S. Patent No. 8,767,857 to Bassam et al. ("Bassam") was filed May 14, 2010, and claims priority to Provisional Application No. 61/213,176, filed on May 14, 2009. Ex. C (Bassam) at 1 (Cover Page).

5. Dr. Madisetti contends that the earliest priority date of the '204 patent is April 4, 2011 (Ex. B, pp. 123-26) and therefore does not challenge the status of Bassam as prior art against the '204 Patent. The Bassam reference is prior art pursuant to at least pre-AIA §102(e).

6. Dr. Madisetti agrees that power amplifiers, digital predistorters, and digital predistorter feedback loop were known. Ex. E (Madisetti Rebuttal Report), ¶1095.

7. Dr. Madisetti does not challenge Bassam's disclosure of claim elements 1[a] or 12[a].

V. LEGAL STANDARD

A. Summary Judgment

Summary judgment is warranted when "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). "Summary judgment is as available in patent cases as in other areas of litigation." *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1366 (Fed. Cir. 2011).

B. The *Alice* Framework

The two-step analytical framework for evaluating patent eligibility is set forth in *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014). In determining whether a claim is patent-ineligible under § 101, the Court must "first determine whether the claims at issue are directed to a patent-ineligible concept." *Id.,* 217. The "abstract ideas" category embodies "the longstanding rule that '[a]n idea of itself is not patentable.'" *Id.,* 218 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). If directed to an abstract idea, the court must then determine whether the claims contain an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application. *Id.,* 217. An alleged "inventive concept" must be recited in the claims themselves. *Semantic Search Techs. LLC v. Aldo U.S., Inc.*, 425 F. Supp. 3d 758, 777 (E.D. Tex. 2019); *see also RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017). Although there may be underlying "factual determinations [that] inform [the *Alice* step two] legal determination," *Semantic*, 425 F. Supp. 3d at 777, courts have recognized that step two can be decided "as a matter of law" where "there is no genuine issue of material fact." *Berkheimer v. HP, Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018).

C. Obviousness

Under 35 U.S.C. § 103(a), a claimed invention is unpatentable if the differences between the invention and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." *See also KSR Int'l*

Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966)). Where "the content of the prior art, the scope of the patent claim, and the level of ordinary skill in the art are not in material dispute, and the obviousness of the claim is apparent in light of these factors, summary judgment is appropriate." *Id.,* 427.

VI. THE ASSERTED CLAIMS DO NOT RECITE PATENT ELIGIBLE SUBJECT MATTER

While it is black letter law that an idea is not patentable, Dr. Bassam admitted that the '204 Patent is only directed to ***ideas***, whereas his related IEEE paper disclosed the actual implementation of his ideas. *See* Ex. G, 104:20-105:7 ("So the patent is on the idea. The paper is to show that idea, how that idea works for the dual-band."). Smart RF has attempted to skirt the constitutional bargain inherent in the patent system and improperly claimed a patent ineligible abstract idea.

Further, there is nothing more in the claims to take them out of the abstract realm. The alleged "inventive concept" must be recited in the claims themselves, but here, the Asserted Claims, both individually and as a combination, do not provide such a concept. Indeed, while the '204 Patent is facially directed to "an algorithm to select the sampling frequency [in a digital predistortion feedback loop]," Ex. A at 2:14-25, as admitted by Dr. Madisetti, "[t]he claims do not recite or otherwise require any particular algorithm." Ex. E, ¶1026. Instead, they recite well-understood, routine, and conventional components and activities that were well known to a POSITA.

A. Step 1: The Asserted Claims Are Directed to an Abstract Idea

At step 1, the Court examines the focus of the claim to determine whether it is directed to an abstract idea. It is fundamental that "[a]n idea of itself is not patentable." *Alice*, 573 U.S. at 218; *see also Interval Lic'g LLC v. AOL, Inc.*, 896 F.3d 1335, 1343–45 (Fed. Cir. 2018) (claims abstract where they "were drafted in such a result-oriented way that they amounted to encompassing the 'principle in the abstract' no matter how implemented"). "[T]he mere physical nature of [a patent's]

claim elements . . . is not enough to save the claims from abstractness." *Chamberlain Grp. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1348 (Fed. Cir. 2019).

As mentioned previously, Dr. Bassam admitted that "the patent is on the idea." Ex. G, 104:20-105:7. More specifically, the abstract idea of performing subsampling in the feedback loop of a multi-band predistortion system, and ultimately trying to compensate for a PAs non-linearity based upon that information. *See* Ex. D, ¶995. As explained by Mr. Proctor, "the idea of collecting and analyzing information using a 'predistorter block' and 'signal observation feedback loop' was not new because predistorters using such generic components had already been around for many years." *Id.*, ¶995; *see also id.,* ¶¶730-738. The claims recite nothing more than generic components and an invitation to perform predistortion with subsampling. They therefore recite nothing more than the many analyzing and processing data claims the Federal Circuit has repeatedly found abstract. *See, e.g., Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353-54 (Fed. Cir. 2016) (collecting cases); *Content Extraction & Transmission LLC v. Wells Fargo Bank, nat. Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014); *Digitech Image Techs, LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014).

The specification further supports that the Asserted Claims are directed to mere abstract ideas. The '204 Patent identifies known configurations for multi-band predistortion systems, including use of subsampling techniques. *See* Ex. A ('204 Patent), 1:38-2:8. It goes on to explain that there are known problems with certain configurations and, "[t]herefore, it is imperative to develop an algorithm to select the sampling frequency" to account for such problems. *Id.,* 2:19-30. Yet, despite purportedly being directed to "developing an algorithm" to solve such problems and incorporating that algorithm into a predistorter, it is undisputed that the claims ***do not*** recite or otherwise require any particular subsampling algorithm. Ex. E, ¶1026; *see also* Ex. D, ¶995. In

other words, all that is left is a generic assortment of known predistortion components with an invitation to perform predistortion and subsampling. *Yanbin Yu v. Apple Inc.*, 1 F.4th 1040, 1043-45 (Fed. Cir. 2021) (finding claims abstract which claim "simply a generic environment in which to carry out the abstract idea").

In Dr. Bassam's words, the '204 Patent claims the idea of performing subsampling in the feedback loop of a multi-band predistortion system and the claims do not pass muster under step 1.

B. Step 2: The Asserted Claims Do Not Recite an Inventive Concept

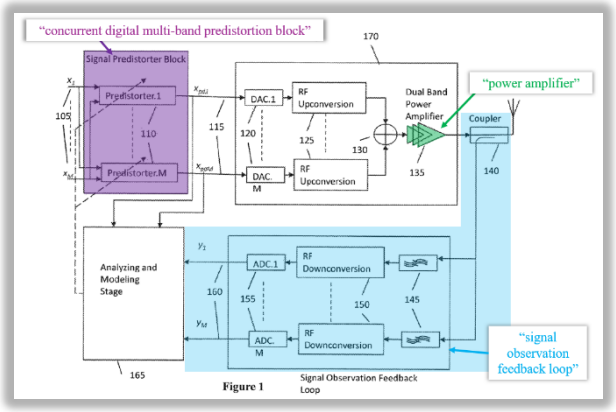
The second step of the *Alice* test can only be satisfied when the claim limitations involve more than the performance of well-understood, routine, [and] conventional activities previously known in the industry." *Berkheimer*, 881 F.3d at 1367. Here, there is no material fact dispute that the Asserted Claims comprise only conventional, well-known components, performing their known and conventional functions. Nor is there any novel processing technique or architecture recited, as performing subsampling in DPD systems was well-known. *See* Section VI.B. Thus, the claims recite no new predistortion functions that did not exist before. Similarly, there is no genuine dispute that the combination of the claimed conventional and well-known components was also conventional and well-known. Indeed, this was admitted by Dr. Bassam. Ex. G, 40:8-17. While Dr. Madisetti claims that the configuration was not conventional, this is flatly contradicted by the '204 Patent itself, which notes that subsampling in multi-band predistortion systems ***was*** known. *See* Ex. A, 2:1-6.

Further, there is no dispute that the Asserted Claims lack any details or procedures, such as a particular predistortion "algorithm" or model, that might transform the generic and abstract predistorter recited into something worthy of patent protection. *See* Ex. D, ¶995. Indeed, Dr. Madisetti was forced to rely on an independent IEEE paper to show the implementation details he argues would enable the Asserted Claims. *See* Ex. E, ¶1033-34, 1038-39. This Court can readily

determine, as a matter of law, that nothing in the claim limitations, taken individually or as an ordered combination, adds "significantly more" to the abstract idea.

VII. THE ASSERTED CLAIMS ARE OBVIOUS IN VIEW OF BASSAM

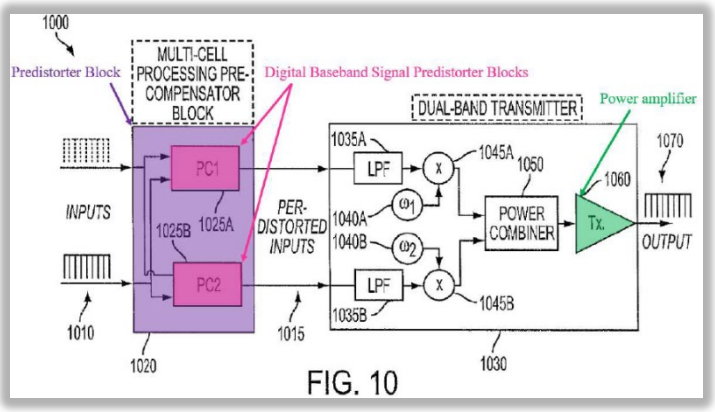
The '204 Patent is invalid for a second reason: it is obvious. Its Asserted Claims require (1) a "power amplifier," (2) a "concurrent digital multi-band predistortion block," and (3) a "signal observation feedback loop." An exemplary embodiment is provided with annotations. Ex. A, FIG. 1 (annotated).



There is no dispute that these components, including the use of subsampling, were well known to a POSITA. Plaintiff's expert, Dr. Madisetti, does not dispute that "components such as power amplifiers, DPD blocks, or feedback loops may have been individually known." Ex. E, ¶1095; *see also id.*, ¶1067 ("digital signal predistorter blocks were well known to a POSITA at the time of the invention"), ¶1097 ("***subsampling techniques and anti-aliasing considerations were known*** in certain contexts") (emphasis added). And two of the '296 Patent's inventors—Drs. Helaoui and Bassam—confirmed that each of these components were known prior to the '204 Patent. *See, e.g.*, Ex. F (Helaoui Dep. Tr. (May)), 231:10-21 (subsampling), 248:8-21 (power amplifiers), 248:22-250:23 (digital signal predistorter block); Ex. G (Bassam Dep. Tr.), 39:17-23 (subsampling receivers), 116:16-117:10 (power amplifiers), 130:15-132:2 (all components of Figure 1 of the '204 Patent, above). As recognized by Dr. Madisetti, Smart RF did not invent subsampling (Ex. E, ¶1097), "a new 'digital signal predistorter block,' 'power amplifier block,' or new ways of analyzing and modeling signals to model a nonlinearity in a power amplifier" (*id.*, ¶1069).

The Asserted Claims describe these generic components in purely conventional, functional terms. For example, the "power amplifier" performs the function of "amplify[ing] modulated concurrent multi-band signals to provide amplified concurrent multi-band signals," the "concurrent digital multi-band predistortion block" performs the function of "effect[ing] predistortion of the modulated concurrent multi-band signals to compensate for a non-linearity of the power amplifier," and the "signal observation feedback loop" performs the function of "effect[ing] concurrent sampling of the amplified concurrent multi-band signals at a subsampling frequency lower than twice a highest signal frequency in the amplified concurrent multi-band signals." There is nothing in the claims to describe ***how*** any of these functions are to be performed.

Elements [1pre] & [12pre]: Bassam discloses "a linearized transmitter" and, in particular, a "multi-cell processing pre-compensator cascaded with a dual-band transmitter" (Ex. C, 3:15-17) "to compensate for the dual-band transmitter's nonlinearities and any intro-band distortion (impairments) between the two RF signals." *Id.,* 6:24-26. This is shown in Bassam Figure 10 above. Ex. C (Bassam), FIG. 10 (annotated).



Elements [1a] & [12a]: Bassam further discloses a dual-band transmitter 1030 including nonlinear transmitter 1060 (power amplifier block (green)). Ex. D, ¶928 (citing Ex. C (Bassam), 5:62-65, 6:15-22). The nonlinear transmitter 1060 amplifies pre-distorted signals 1015 received from the digital multi-cell predistorter block 102 and is therefore a power amplifier block connected to the digital signal predistortion block to amplify the predistorted signals. *Id.* (citing Ex. C (Bassam), 6:34-43). Dr. Madisetti ***does not*** dispute these elements. *See* Ex. E, ¶750.

Elements [1b] & [12b]: Bassam discloses a digital multi-cell predistorter block 1020 (digital signal predistortion block (purple)) that uses two processing cells 1025A/PC1 and 1025B/PC2 (digital baseband signal predistorters (pink)) to compensate for the "dual-band transmitter's nonlinearities and any intra-band distortions between the two RF signals." Ex. D, ¶930 (citing Ex. C (Bassam), 6:22-26). Thus, Bassam discloses "a concurrent digital multi-band predistortion block configured to effect predistortion of the modulated concurrent multi-band signals to compensate for a non-linearity of the power amplifier," as claimed. *Id.*

Dr. Madisetti argues that Bassam does not disclose concurrent input signals or concurrent output signals, but this is flatly contradicted by the figure above and the text of Bassam, which states that "dual inputs 1010 and dual outputs 1015" are fed into a "dual-band transmitter." Ex. C, 6:22-30. For Bassam's dual-band transmitter to transmit a dual-band signal comprised of dual outputs 1015, those signals will travel concurrently through Bassam's system otherwise a dual-band signal cannot be created. Ex. D, ¶¶930-31. Further, during the deposition of Dr. Helaoui—one of Smart RF's Directors and named inventor on Bassam and the '204 Patent—Dr. Helaoui admitted that Bassam's Figure 10 discloses a "concurrent digital multiband predistorter block." Ex. F, 248:22-250:23. There is no genuine dispute that Bassam discloses these claim elements.

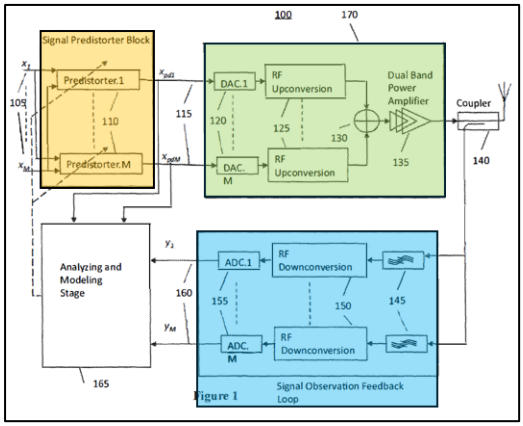
Elements [1c] & [12c]: Bassam renders obvious the '204 Patent's claimed subsampling in the "signal observation feedback loop." Specifically, Bassam explains that "the processing cells 1025A and 1025B, us[e] the input signals 1010 and output signal 1070 of the dual-band transmitter 1030 to estimate any nonlinearities and distortions (impairments) and identify a proper processing function for each of the two processing cells PC1 1025A and PC2 1025B." Ex. D, ¶933 (citing Ex. C (Bassam), 6:29-33). By using the output signal 1070 to "estimate any nonlinearities and distortions (impairments) and identify a proper processing function for each of the two processing

cell," Bassam discloses a "signal observation feedback loop configured to effect concurrent sampling of the amplifier concurrent multi-band signals." *Id.* This feedback loop would also "concurrently sample the amplified concurrent multiband signals" given Bassam's used of a concurrent, dual-band PA. *Id.*

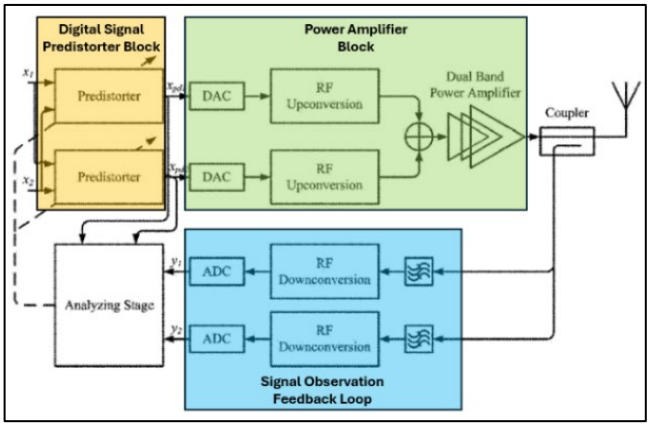
Further confirming the obvious nature of the "signal observation feedback loop," Dr. Bassam admitted that the claimed feedback loop was well known at the time of the '204 Patent. In particular, Dr. Bassam was asked during deposition about one of his IEEE papers, a paper Plaintiff points to for conception purposes, and he admitted that the system depicted in Figure 4 of that IEEE paper was "known prior to the time [he] did the work that led to this paper."

> Q Is Figure 4 depicting a system that was known prior to the time you did the work that led to this paper?
> MR. CONROY: Same objections. You can answer.
> THE WITNESS: This – yes, this is the way that it was known at that time.

Ex. G, 40:8-17. Figure 4 (right) is reproduced below and depicts an identical configuration to that of Figure 1 of the '204 Patent (left).



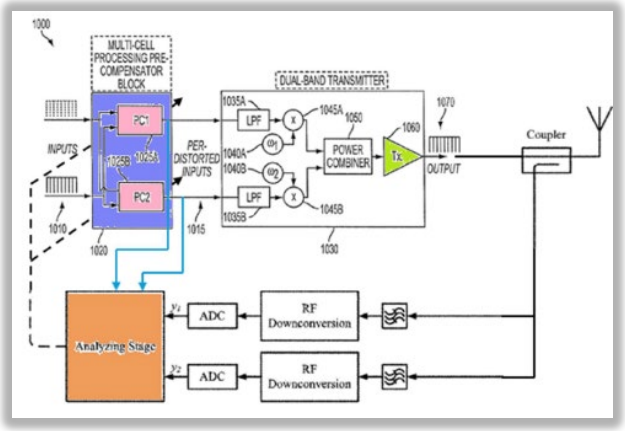
Ex. A ('204 Patent), FIG. 1 (annotated)



Ex. H, FIG. 4 (annotated)

While Dr. Madisetti again claims that Bassam does not disclose "concurrent sampling," he simply relies on his (incorrect) concurrence argument noted above with respect to element 1[a]. Ex. E, ¶758. The absence of analysis from Dr. Madisetti is telling here because, as mentioned

previously, Dr. Helaoui expressly admitted that Bassam discloses "a "concurrent digital multiband predistorter block." Ex. F, 248:22-250:23. Dr. Helaoui also testified that Bassam's Figure 10 is "also covered by '296 and '204 patent" (Ex. I, 138:7-24), entirely undercutting Dr. Madisetti's conclusory argument that the Bassam reference somehow lacks "concurrence." The Bassam reference further explains that "concurrent dual-band and multi-carrier transmitters" were known (Ex. C, 1:35-46 ("Background" section)), and in such known systems the Bassam reference explains that "multiple signals modulated in different carrier frequencies are ***concurrently*** transmitted through a single branch RF front-end" (*id.* (emphasis added)). The straightforward and obvious implementation of Bassam is depicted on the right.



As to the feedback loop sampling "at a subsampling frequency lower than twice a highest signal frequency in the amplified concurrent multi-band signals," it is not disputed that Bassam's feedback loop would either be sampled at Nyquist, above Nyquist, or subsampled below Nyquist. Ex. D, ¶933. In fact, it is undisputed that subsampling was well known at this time. Ex. E, ¶1097 ("***subsampling techniques and anti-aliasing considerations were known*** in certain contexts") (emphasis added); Ex. F, 231:10-21 (subsampling); Ex. G, 39:17-23 (subsampling receivers). This was also admitted during prosecution: "it is ***well known in the art of signal communication*** that ***subsampling is the process of sampling at a frequency less than the Nyquist rate***." Ex. J, p. 167.

Indeed, as Mr. Proctor explains, subsampling receivers were incorporated into digital predistortion systems as early as 2002. Ex. D, ¶738. This fact has not been rebutted. Subsampling was known to be advantageous because it reduces the required processing rate, reduces the number

of down-conversion units and filters, and expensive high-rate components can be replaced with cheaper, low-rate components. *Id.,* ¶737. A POSITA would therefore be motivated to perform subsampling in the Bassam feedback path to obtain these benefits. *Id.*, ¶¶921-26.

Dr. Madisetti suggests that Defendants' subsampling arguments are driven by hindsight (Ex. E, ¶¶760-61), but this is entirely unavailing. Rather, the obvious nature of subsampling in predistortion feedback loops is established by prior art going back to at least 2002, and the '204 Patent even explains the known use of subsampling for DPD feedback loops. *See, e.g.*, Ex. A, 2:1-8 (describing subsampling receiver "adopted in the feedback loop of the multi-band linearization architecture" in the "Related Art" section of the "Background of the Invention"). Similarly, the motivations of reducing implementation costs and the number of components is not a "generic goal" as alleged by Dr. Madisetti; rather, they are the core goals for any POSITA attempting to design such a system. *See* Ex. A, 2:6-8 (noting that "using subsampling" results in same benefits of "simplif[ying] the feedback loop topology, requir[ing] fewer number of RF components, and reduc[ing] the power consumption"); Ex. K, 5:25-26.

Element [12d]: Bassam renders obvious the claimed limitation of "controlling the predistorting by the subsampled concurrent multi-band signal." This limitation recites nothing other than the entirely commonplace and unremarkable assertion to "update your predistorter." Ex. D, ¶963. By "identif[ing] a proper processing function for each of the two processing cells PC1 1025A and PC2 1025B" (Ex. C, 6:29-33)), Bassam updates its predistorters. Dr. Madisetti's *ipse dixit* statement on this issue (Ex. E, ¶¶771-774) that Defendants have failed to demonstrate this limitation rings hollow. Indeed, the *entire* basis for Dr. Madisetti attributing benefit for the '857, '204, and '296 Patents is based upon Bassam's Figure 10. Ex. L, Appendix B, p. 2. It cannot be that Bassam's Figure 10 discloses a working predistorter for Dr. Madisetti's testing yet

somehow does not show a "controlling" step when used as prior art.

Claim 14: Bassam renders obvious choosing a subsampling frequency "to avoid[] aliasing between replicas." As discussed above, it was well understood that if a subsampling feedback is used, the subsampling frequency must be chosen to avoid aliasing. *See* Section II. And, notably, claim 14 does not recite any particular technique for avoiding aliasing, it only recites the well-understood objective of avoiding aliasing. Further still, Dr. Madisetti does not dispute that Bassam renders this anti-aliasing requirement obvious. Ex. E, ¶¶775-77. There is no genuine dispute that the Asserted Claims are obvious in view of Bassam.

VIII. CONCLUSION

For the foregoing reasons, summary judgment should be granted in favor of Defendants that the '204 Patent is invalid under 35 U.S.C. §§ 101 and 103.

Dated: August 25, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned counsel hereby certifies that on August 25, 2025, a true and correct copy of the foregoing was electronically filed with the Clerk of Court using the CM/ECF system, which will automatically send notification of such filing to all attorneys of record. A courtesy copy was also emailed to counsel of record, including all exhibits filed under seal.

/s/ Matthew S. Yungwirth
Matthew S. Yungwirth

CERTIFICATE OF AUTHORIZATION TO FILE UNDER SEAL

I hereby certify that certain exhibits to this Motion are authorized to be filed under seal pursuant to the Protective Order entered in this case.

/s/ Matthew S. Yungwirth
Matthew S. Yungwirth